

WHAT IS CLAIMED IS:

1. An optical alignment apparatus, comprising:
a base plate,
a rotatable plate rotatably mountable on the base plate; and
a sliding plate slideably mountable on the base plate; and
wherein said sliding plate and said rotatable plate include surfaces for mounting optical components thereon, and each of the base plate, said sliding plate and said rotatable plate include features manufactured to the same tolerance by being chemically etched by the same process.
2. An apparatus as claimed in claim 1, wherein said base plate includes a slot for guiding said sliding plate, and an underside surface which includes first etched regions on either side of said slot, and wherein said sliding plate includes extended portions on either side of the mounting surface thereof, ends of said extended portions including transversely projecting tabs, upper surfaces of said tabs being in contact with said first etched regions.
3. An apparatus as claimed in claim 2, wherein said base plate includes a slot for guiding said sliding plate, and an underside surface which includes first etched regions on either side of said slot, and wherein said tabs are etched and said first etched regions are etched Such that the bottom of the tabs do not protrude past the bottom of the base plate.
4. An apparatus as claimed in claim 3, wherein said base plate includes a slot for guiding said sliding plate, and an underside surface which includes first etched regions on either side of said slot, and wherein said base plate and said sliding plate are flush mounted at upper surfaces thereof for at least portions of said extended portions of said sliding plate.

5. An apparatus as claimed in claim 1, wherein said base plate includes a slot for guiding said sliding plate, and an underside surface which includes first etched regions on either side of said slot, and wherein each of said base plate, said rotatable plate and said sliding plate include heat isolation areas whereat said sliding plate and said rotatable plate are soldered to said base plate.
6. An apparatus as claimed in claim 5, wherein said base plate includes a slot for guiding said sliding plate, and an underside surface which includes first etched regions on either side of said slot, and wherein said heat isolation areas are configured as a series of spaced lands separated by apertures, such that the series of lands and apertures form a vernier scale for use in alignment of said optical components.
7. An apparatus as claimed in claim 6, wherein said base plate includes a slot for guiding said sliding plate, and an underside surface which includes first etched regions on either side of said slot, and wherein said lands on said sliding plate are equally spaced linearly, and said lands on said rotatable plate are equally spaced radially.
8. A method of making an optical alignment apparatus, comprising;
providing a base plate, and a rotatable plate and a sliding plate for mounting to said base plate;
etching a slot in said base plate for mounting said sliding plate;
etching grooves in an underside of said base plate on either side of said slot;
etching transversely extending tabs on said sliding plate in a thickness direction thereof;
mounting said sliding plate to said base plate such that said tabs ride in said grooves and upper surfaces of said sliding plate are flush with said base plate at regions apart from an optical element mounting surface of said sliding plate; and mounting said rotatable plate to said base plate at a pivot point.
9. A method as claimed in claim 8, wherein features of said base plate, said sliding plate and said rotatable plate are provided by common etching process.

10. A method of aligning optical components, comprising;
providing a base plate, and a sliding plate and a rotatable plate mountable on said base plate; said plates being prepared through a common etching process,
assembling said sliding plate and said rotatable plate to said base plate;
attaching optical components to said sliding plate and said rotatable plate;
attaching a linear stage to said sliding plate for positioning thereof;
aligning said optical components by positioning said sliding plate and said rotatable plate, and
soldering said rotatable plate and said sliding plate to said base plate at heat isolation locations thereof.